AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

SOURCE: 28 FR 12465, Nov. 22, 1963, unless otherwise noted.

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Subpart A—Terminology

§ 2.1 Terms and definitions.

(a) Where a term or definition appears in this part of the Commission's Rules, it shall be the definitive term or definition and shall prevail throughout the Commission's Rules.

(b) The source of each definition is indicated as follows:

CONV—*International Telecommunication Convention*, Malaga-Torremolinos, 1973.
RR—*Radio Regulations*, Geneva, 1982.
FCC—Federal Communications Commission.

(c) The following terms and definitions are issued:

Accepted Interference.[1] Interference at a higher level than defined as permissible interference and which has been agreed upon between two or more administrations without prejudice to other administrations. (RR)

Active Satellite. A satellite carrying a station intended to transmit or retransmit radiocommunication signals. (RR)

Active Sensor. A measuring instrument in the earth exploration-satellite service or in the space research service by means of which information is obtained by transmission and reception of radio waves. (RR)

Administration. Any governmental department or service responsible for discharging the obligations undertaken in the Convention of the International Telecommunication Union and the Regulations. (CONV)

Aeronautical Earth Station. An Earth station in the fixed-satellite service, or, in some cases, in the aeronautical mobile-satellite service, located at a specified fixed point on land to provide a feeder link for the aeronautical mobile-satellite service. (RR)

Aeronautical Fixed Service. A radiocommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air transport. (RR)

Aeronautical Fixed Station. A station in the aeronautical fixed service. (RR)

Aeronautical Mobile Off-Route (OR) Service. An aeronautical mobile service intended for communications, including those relating to flight coordination, primarily outside national or international civil air routes. (RR)

Aeronautical Mobile Route (R) Service. An aeronautical mobile service reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes. (RR)

Aeronautical Mobile-Satellite Off-Route (OR) Service. An aeronautical mobile-satellite service intended for communications, including those relating to flight coordination, primarily outside national and international civil air routes. (RR)

Aeronautical Mobile-Satellite Route (R) Service. An aeronautical mobile-satellite service reserved for communications relating to safety and regularity of flights, primarily along national or international civil air routes. (RR)

Aeronautical Mobile-Satellite Service. A mobile-satellite service in which mobile earth stations are located on board aircraft; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service. (RR)

Aeronautical Mobile Service. A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radiobeacon stations may also participate in this service on designated distress and emergency frequencies. (RR)

Aeronautical Radionavigation-Satellite Service. A radionavigation-satellite service in which earth stations are located on board aircraft. (RR)

Aeronautical Radionavigation Service. A radio-navigation service intended for

[1] The terms *permissible interference* and *accepted interference* are used in the coordination of frequency assignments between administrations.

the benefit and for the safe operation of aircraft. (RR)

Aeronautical Station. A land station in the aeronautical mobile service.

NOTE: In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea. (RR)

Aircraft Earth Station. A mobile earth station in the aeronautical mobile-satellite service located on board an aircraft. (RR)

Aircraft Station. A mobile station in the aeronautical mobile service, other than a survival craft station, located on board an aircraft. (RR)

Allocation (of a frequency band). Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions. This term shall also be applied to the frequency band concerned. (RR)

Allotment (of a radio frequency or radio frequency channel). Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space radiocommunication service in one or more identified countries or geographical area and under specified conditions. (RR)

Altitude of the Apogee or Perigee. The altitude of the apogee or perigee above a specified reference surface serving to represent the surface of the Earth. (RR)

Amateur-Satellite Service. A radiocommunication service using space stations on earth satellites for the same purposes as those of the amateur service. (RR)

Amateur Service. A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest. (RR)

Amateur Station. A station in the amateur service. (RR)

Assigned Frequency. The centre of the frequency band assigned to a station. (RR)

Assigned Frequency Band. The frequency band within which the emission of a station is authorized; the width of the band equals the necessary bandwidth plus twice the absolute value of the frequency tolerance. Where space stations are concerned, the assigned frequency band includes twice the maximum Doppler shift that may occur in relation to any point of the Earth's surface. (RR)

Assignment (of a radio frequency or radio frequency channel). Authorization given by an administration for a radio station to use a radio frequency or radio frequency channel under specified conditions. (RR)

Base Earth Station. An earth station in the fixed-satellite service or, in some cases, in the land mobile-satellite service, located at a specified fixed point or within a specified area on land to provide a feeder link for the land mobile-satellite service. (RR)

Base Station. A land station in the land mobile service. (RR)

Broadcasting-Satellite Service. A radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public.

NOTE: In the broadcasting-satellite service, the term *direct reception* shall encompass both individual reception and community reception. (RR)

Broadcasting Service. A radiocommunication service in which the transmissions are intended for direct reception by the general public. This service may include sound transmissions, television transmissions or other types of transmission. (CONV)

Broadcasting Station. A station in the broadcasting service. (RR)

Carrier Power (of a radio transmitter). The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle taken under the condition of no modulation. (RR)

Characteristic Frequency. A frequency which can be easily identified and measured in a given emission.

NOTE: A carrier frequency may, for example, be designated as the characteristic frequency. (RR)

Class of Emission. The set of characteristics of an emission, designated by

standard symbols, e.g., type of modulation, modulating signal, type of information to be transmitted, and also if appropriate, any additional signal characteristics. (RR)

Coast Earth Station. An earth station in the fixed-satellite service or, in some cases, in the maritime mobile-satellite service, located at a specified fixed point on land to provide a feeder link for the maritime mobile-satellite service. (RR)

Coast Station. A land station in the maritime mobile service. (RR)

Community Reception (in the broadcasting-satellite service). The reception of emissions from a space station in the broadcasting-satellite service by receiving equipment, which in some cases may be complex and have antennae larger than those for individual reception, and intended for use: (1) by a group of the general public at one location; or (2) through a distribution system covering a limited area. (RR)

Coordinated Universal Time (UTC). Time scale, based on the second (SI), as defined and recommended by the CCIR,[2] and maintained by the Bureau International de l'Heure (BIH).

NOTE: For most practical purposes associated with the Radio Regulations, UTC is equivalent to mean solar time at the prime meridian (0 degrees longitude), formerly expressed in GMT. (RR)

Coordination Area. The area associated with an earth station outside of which a terrestrial station sharing the same frequency band neither causes nor is subject to interfering emissions greater than a permissible level. (RR)

Coordination Contour. The line enclosing the coordination area. (RR)

Coordination Distance. Distance on a given azimuth from an earth station beyond which a terrestrial causes nor is subject to interfering emissions greater than a permissible level. (RR)

Deep Space. Space at distance from the Earth equal to, or greater than, 2×10^6 kilometers. (RR)

Direct Sequence Systems. A spread spectrum system in which the carrier has been modulated by a high speed spreading code and an information data stream. The high speed code sequence dominates the ''modulating function'' and is the direct cause of the wide spreading of the transmitted signal.

Duplex Operation. Operating method in which transmission is possible simultaneously in both directions of a telecommunication channel.[3] (RR)

Earth Exploration-Satellite Service. A radiocommunication service between earth stations and one or more space stations, which may include links between space stations in which:

(1) Information relating to the characteristics of the Earth and its natural phenomena is obtained from active sensors or passive sensors on earth satellites;

(2) Similar information is collected from air-borne or earth-based platforms;

(3) Such information may be distributed to earth stations within the system concerned;

(4) Platform interrogation may be included.

NOTE: This service may also include feeder links necesary for its operation. (RR)

Earth Station. A station located either on the earth's surface or within the major portion of earth's atmosphere and intended for communication:

(1) With one or more space stations; or

(2) With one or more stations of the same kind by means of one or more reflecting satellites or other objects in space. (RR)

Effective Radiated Power (e.r.p) (in a given direction). The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction. (RR)

Emergency Position-Indicating Radiobeacon Station. A station in the mobile service the emissions of which are intended to facilitate search and rescue operations. (RR)

Emission. Radiation produced, or the production of radiation, by a radio transmitting station.

NOTE: For example, the energy radiated by the local oscillator of a radio receiver would not be an emission but a radiation. (RR)

[2] The full definition is contained in CCIR Recommendation 460–2.

[3] In general, duplex operation and semi-duplex operation require two frequencies in radiocommunication; simplex operation may use either one or two.

Equivalent Isotropically Radiated Power (e.i.r.p.). The product of the power suppled to the antenna and the antenna gain in a given direction relative to an isotropic antenna. (RR)

Equivalent Monopole Radiated Power (e.m.r.p.) (in a given direction). The product of the power supplied to the antenna and its gain relative to a short vertical antenna in a given direction. (RR)

Equivalent Satellite Link Noise Temperature. The noise temperature referred to the output of the receiving antenna of the earth station corresponding to the radio-frequency noise power which produces the total observed noise at the output of the satellite link excluding the noise due to interference coming from satellite links using other satellites and from terrestrial systems. (RR)

Experimental Station. A station utilizing radio waves in experiments with a view to the development of science or technique.

NOTE: This definition does not include amateur stations. (RR)

Facsimile. A form of telegraphy for the transmission of fixed images, with or without half-tones, with a view to their reproduction in a permanent form.

NOTE: In this definition the term *telegraphy* has the same general meaning as defined in the Convention. (RR)

Feeder Link. A radio link from an earth station at a given location to a space station, or vice versa, conveying information for a space radiocommunication service other than for the fixed-satellite service. The given location may be at a specified fixed point, or at any fixed point within specified areas. (RR)

Fixed-Satellite Service. A radiocommunication service between earth stations at given positions, when one or more satellites are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-to-satellite links, which may also be operated in the inter-satellite service; the fixed-satellite service may also include feeder links for other space radiocommunication services. (RR)

Fixed Service. A radiocommunication service between specified fixed points. (RR)

Fixed Station. A station in the fixed service. (RR)

Frequency Hopping Systems. A spread spectrum system in which the carrier is modulated with the coded information in a conventional manner causing a conventional spreading of the RF energy about the frequency carrier. The frequency of the carrier is not fixed but changes at fixed intervals under the direction of a coded sequence. The wide RF bandwidth needed by such a system is not required by spreading of the RF energy about the carrier but rather to accommodate the range of frequencies to which the carrier frequency can hop. The test of a frequency hopping system is that the near term distribution of hops appears random, the long term distribution appears evenly distributed over the hop set, and sequential hops are randomly distributed in both direction and magnitude of change in the hop set.

Frequency-Shift Telegraphy. Telegraphy by frequency modulation in which the telegraph signal shifts the frequency of the carrier between predetermined values. (RR)

Frequency Tolerance. The maximum permissible departure by the centre frequency of the frequency band occupied by an emission from the assigned frequency or, by the characteristic frequency of an emission from the reference frequency.

NOTE: The frequency tolerance is expressed in parts in 10^6 or in hertz. (RR)

Full Carrier Single-Sideband Emission. A single-sideband emission without suppression of the carrier. (RR)

Gain of an Antenna. The ratio, usually expressed in decibels, of the power required at the input of a loss free reference antenna to the power supplied to the input of the given antenna to produce, in a given direction, the same field strength or the same power flux-density at the same distance. When not specified otherwise, the gain refers to the direction of maximum radiation. The gain may be considered for a specified polarization.

NOTE: Depending on the choice of the reference antenna a distinction is made between:

(1) Absolute or isotropic gain (Gi), when the reference antenna is an isotropic antenna isolated in space;

(2) Gain relative to a half-wave dipole (Gd), when the reference antenna is a half-wave dipole isolated in space whose equatorial plane contains the given direction;

(3) Gain relative to a short vertical antenna (Gv), when the reference antenna is a linear conductor, much shorter than one quarter of the wavelength, normal to the surface of a perfectly conducting plane which contains the given direction. (RR)

General Purpose Mobile Service. A mobile service that includes all mobile communications uses including those within the Aeronautical Mobile, Land Mobile, or the Maritime Mobile Services.

Geostationary Satellite. A geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator and which thus remains fixed relative to the Earth; by extension, a satellite which remains approximately fixed relative to the Earth. (RR)

Geostationary Satellite Orbit. The orbit in which a satellite must be placed to be a geostationary satellite. (RR)

Geosynchronous Satellite. An Earth satellite whose period of revolution is equal to the period of rotation of the Earth about its axis. (RR)

Harmful Interference[4]. Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with these [international] Radio Regulations. (RR)

Hybrid Spread Spectrum Systems. Hybrid spread spectrum systems are those which use combinations of two or more types of direct sequence, frequency hopping, time hopping and pulsed FM modulation in order to achieve their wide occupied bandwidths.

Inclination of an Orbit (of an earth satellite). The angle determined by the plane containing the orbit and the plane of the Earth's equator. (RR)

Individual Reception (in the broadcasting-satellite service). The reception of emissions from a space station in the broadcasting-satellite service by simple domestic installations and in particular those possessing small antennae. (RR)

Industrial, Scientific and Medical (ISM) (of radio frequency energy) Applications. Operation of equipment or appliances designed to generate and use locally radio-frequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunications. (RR)

Instrument Landing System (ILS). A radionavigation system which provides aircraft with horizontal and vertical guidance just before and during landing and, at certain fixed points, indicates the distance to the reference point of landing. (RR)

Instrument Landing System Glide Path. A system of vertical guidance embodied in the instrument landing system which indicates the vertical deviation of the aircraft from its optimum path of descent. (RR)

Instrument Landing System Localizer. A system of horizontal guidance embodied in the instrument landing system which indicates the horizontal deviation of the aircraft from its optimum path of descent along the axis of the runway. (RR)

Interference. The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy. (RR)

Inter-Satellite Service. A radiocommunication service providing links between artificial satellites. (RR)

Ionospheric Scatter. The propagation of radio waves by scattering as a result of irregularities or discontinuities in the ionization of the ionosphere. (RR)

Land Earth Station. An earth station in the fixed-satellite service or, in some cases, in the mobile-satellite service, located at a specified fixed point or within a specified area on land to provide a feeder link for the mobile-satellite service. (RR)

[4] See Resolution 68 of the *Radio Regulations*.

Land Mobile Earth Station. A mobile earth station in the land mobile-satellite service capable of surface movement within the geographical limits of a country or continent. (RR)

Land Mobile-Satellite Service. A mobile-satellite service in which mobile earth stations are located on land. (RR)

Land Mobile Service. A mobile service between base stations and land mobile stations, or between land mobile stations. (RR)

Land Mobile Station. A mobile station in the land mobile service capable of surface movement within the geographical limits of a country or continent.

Land Station. A station in the mobile service not intended to be used while in motion. (RR)

Left-Hand (or Anti-Clockwise) Polarized Wave. An elliptically or circularly-polarized wave, in fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a left hand or anti-clockwise direction. (RR)

Line A. Begins at Aberdeen, Washington running by great circle arc to the intersection of 48° N., 120° W., thence along parallel 48° N., to the intersection of 95° W., thence by great circle arc through the southernmost point of Duluth, Minn., thence by great circle arc to 45° N., 85° W., thence southward along meridian 85° W., to its intersection with parallel 41° N., thence along parallel 41° N., to its intersection with meridian 82° W., thence by great circle arc through the southernmost point of Bangor, Maine, thence by great circle arc through the southernmost point of Searsport, Maine, at which point it terminates. (FCC)

Line B. Begins at Tofino, B.C., running by great circle arc to the intersection of 50° N., 125° W., thence along parallel 50° N., to the intersection of 90° W., thence by great circle arc to the intersection of 45° N., 79°30′ W., thence by great circle arc through the northernmost point of Drummondville, Quebec (Lat. 45°52′ N., Long 72°30′ W.), thence by great circle arc to 48°30′ N., 70° W., thence by great circle arc through the northernmost point of Compbellton, N.B., thence by great circle are through the northernmost point of Liverpool, N.S., at which point it terminates. (FCC)

Line C. Begins at the intersection of 70° N., 144° W., thence by great circle arc to the intersection of 60° N., 143° W., thence by great circle arc so as to include all of the Alaskan Panhandle. (FCC)

Line D. Begins at the intersection of 70° N., 138° W., thence by great circle arc to the intersection of 61°20′ N., 139° W. (Burwash Landing), thence by great circle arc to the intersection of 60°45′ N., 135° W., thence by great circle arc to the intersection of 56° N., 128° W., thence south along 128° meridian to Lat. 55° N., thence by great circle arc to the intersection of 54° N., 130° W., thence by great circle arc to Port Clements, thence to the Pacific Ocean where it ends. (FCC)

Maritime Mobile-Satellite Service. A mobile-satellite service in which mobile earth stations are located on board ships; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service. (RR)

Maritime Mobile Service. A mobile service between coast stations and ship stations, or between ship stations, or between associated on-board communication stations; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service. (RR)

Maritime Radionavigation-Satellite Service. A radionavigation-satellite service in which earth stations are located on board ships. (RR)

Maritime Radionavigation Service. A radionavigation service intended for the benefit and for the safe operation of ships. (RR)

Marker Beacon. A transmitter in the aeronautical radionavigation service which radiates vertically a distinctive pattern for providing position information to aircraft. (RR)

Mean Power (of a radio transmitter). The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions. (RR)

Meteorological Aids Service. A radiocommunication service used for meteorological, including hydrological, observation and exploration. (RR)

Meteorological-Satellite Service. An earth exploration-satellite service for meteorological purposes. (RR)

Mobile Earth Station. An earth station in the mobile-satellite service intended to be used while in motion or during halts at unspecified points. (RR)

Mobile-Satellite Service. A radiocommunication service:

(1) Between mobile earth stations and one or more space stations, or between space stations used by this service; or

(2) Between mobile earth stations by means of one or more space stations.

NOTE: This service may also include feeder links necessary for its operation. (RR)

Mobile Service. A radiocommunication service between mobile and land stations, or between mobile stations. (CONV)

Mobile Station. A station in the mobile service intended to be used while in motion or during halts at unspecified points. (RR)

Multi-Satellite Link. A radio link between a transmitting earth station and a receiving earth station through two or more satellites, without any intermediate earth station.

NOTE: A multisatellite link comprises one up-link, one or more satellite-to-satellite links and one down-link. (RR)

Necessary Bandwidth. For a given class of emission, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions. (RR)

Non-Voice, Non-Geostationary Mobile-Satellite Service. A mobile-satellite service reserved for use by non-geostationary satellites in the provision of non-voice communications which may include satellite links between land earth stations at fixed locations.

Occupied Bandwidth. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage Beta/2 of the total mean power of a given emission.

NOTE: Unless otherwise specified by the CCIR for the appropriate class of emission, the value of Beta/2 should be taken as 0.5%. (RR)

On-Board Communication Station. A low-powered mobile station in the maritime mobile service intended for use for internal communications on board a ship, or between a ship and its lifeboats and life-rafts during lifeboat drills or operations, or for communication within a group of vessels being towed or pushed, as well as for line handling and mooring instructions. (RR)

Orbit. The path, relative to a specified frame of reference, described by the centre of mass of a satellite or other object in space subjected primarily to natural forces, mainly the force of gravity. (RR)

Out-of-band Emission. Emission on a frequency or frequencies immediately outside the necessary bandwidth which results from the modulation process, but excluding spurious emissions. (RR)

Passive Sensor. A measuring instrument in the earth exploration-satellite service or in the space research service by means of which information is obtained by reception of radio waves of natural origin. (RR)

Peak Envelope Power (of a radio transmitter). The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle at the crest of the modulation envelope taken under normal operating conditions. (RR)

Period (of a satellite). The time elapsing between two consecutive passages of a satellite through a characteristic point on its orbit. (RR)

Permissible Interference. Observed or predicted interference which complies with quantitative interference and sharing criteria contained in these [international Radio] Regulations or in CCIR Recommendations or in special agreements as provided for in these Regulations. (RR)

Port Operations Service. A maritime mobile service in or near a port, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the operational handling, the movement and the safty of ships and, in emergency, to the safety of persons.

NOTE: Messages which are of a public correspondence nature shall be excluded from this service. (RR)

Port Station. A coast station in the port operations service. (RR)

Power. Whenever the power of a radio transmitter, etc. is referred to it shall be expressed in one of the following forms, according to the class of emission, using the arbitrary symbols indicated:

(1) Peak envelope power (PX or pX);
(2) Mean power (PY or pY);
(3) Carrier power (PZ or pZ).

NOTE 1: For different classes of emission, the relationships between peak envelope power, mean power and carrier power, under the conditions of normal operation and of no modulation, are contained in CCIR Recommendations which may be used as a guide.

NOTE 2: For use in formulae, the symbol ''p'' denotes power expressed in watts and the symbol ''P'' denotes power expressed in decibels relative to a reference level. (RR)

Primary Radar. A radiodetermination system based on the comparison of reference signals with radio signals reflected from the position to be determined. (RR)

Protection Ratio. The minimum value of the wanted-to-unwanted signal ratio, usually expressed in decibels, at the receiver input determined under specified conditions such that a specified reception quality of the wanted signal is achieved at the receiver output. (RR)

Public Correspondence. Any telecommunication which the offices and stations must, by reason of their being at the disposal of the public, accept for transmission. (CONV)

Pulsed FM Systems. A pulsed FM system is a spread spectrum system in which a RF carrier is modulated with a fixed period and fixed duty cycle sequence. At the beginning of each transmitted pulse, the carrier frequency is frequency modulated causing an additional spreading of the carrier. The pattern of the frequency modulation will depend upon the spreading function which is chosen. In some systems the spreading function is a linear FM chirp sweep, sweeping either up or down in frequency.

Radar. A radiodetermination system based on the comparison of reference signals with radio signals reflected, or retrainsmitted, from the position to be determined. (RR)

Radar Beacon (RACON). A transmitter-receiver associated with a fixed navigational mark which, when triggered by a radar, automatically returns a distinctive signal which can appear on the display of the triggering radar, providing range, bearing and identification information. (RR)

Radiation. The outward flow of energy from any source in the form of radio waves. (RR)

Radio. A general term applied to the use of radio waves. (CONV)

Radio Altimeter. Radionavigation equipment, on board an aircraft or spacecraft or the spacecraft above the Earth's surface or another surface. (RR)

Radio Astronomy. Astronomy based on the reception of radio waves of cosmic origin. (RR)

Radio Astronomy Service. A service involving the use of radio astronomy. (RR)

Radio Astronomy Station. A station in the radio astronomy service. (RR)

Radiobeacon Station. A station in the radionavigation service the emissions of which are intended to enable a mobile station to determine its bearing or direction in relation to radiobeacon station. (RR)

Radiocommunication. Telecommunication by means of radio waves. (CONV)

Radiocommunication Service. A service as defined in this Section involving the transmission, emission and/or reception of radio waves for specific telecommunication purposes.

NOTE: In these [international] Radio Regulations, unless otherwise stated, any radiocommunication service relates to terrestrial radiocommunication. (RR)

Radiodetermination. The determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of radio waves. (RR)

Radiodetermination-Satellite Service. A radiocommunication service for the purpose of radiodetermination involving the use or one of more space stations. This service may also include

feeder links necessary for its own operation. (RR)

Radiodetermination Service. A radiocommunication service for the purpose of radiodetermination. (RR)

Radiodetermination Station. A station in the radiodetermination serviice. (RR)

Radio Direction-Finding. Radiodetermination using the reception of radio waves for the purpose of determining the direction of a station or object. (RR)

Radio Direction-Finding Station. A radiodetermination station using radio direction-finding. (RR)

Radiolocation. Radiodetermination used for purposes other than those of radionavigation. (RR)

Radiolocation Land Station. A station in the radiolocation service not intended to be used while in motion. (RR)

Radiolocation Mobil Station. A station in the radiolocation service intended to be used while in motion or during halts at unspecified points. (RR)

Radiolocation Service. A radiodetermination service for the purpose of radiolocation. (RR)

Radionavigation. Radiodetermination used for the purposes of navigation, including obstruction warning.

Radionavigation Land Station. A station in the radionavigation service not intended to be used while in motion. (RR)

Radionavigation Mobile Station. A station in the radionavigation service intended to be used while in motion or during halts at unspecified points. (RR)

Radionavigation-Satellite Service. A radiodetermination-satellite service used for the purpose of radionavigation. This service may also include feeder links necessary for its operation. (RR)

Radionavigation Service. A radiodetermination service for the purpose of radionavigation. (RR)

Radiosonde. An automatic radio transmitter in the meteorological aids service usually carried on an aircraft, free ballon, kite or parachute, and which transmits meteorological data. (RR)

Radiotelegram. A telegram, originating in or intended for a mobile station or a mobile earth station transmitted on all or part of its route over the radiocommunication channels of the mobile service or of the mobile-satellite service. (RR)

Radiotelemetry. Telemetry by means of radio waves. (RR)

Radiotelephone Call. A telephone call, originating in or intended for a mobile station or a mobile earth station, transmitted on all or part of its route over the radiocommunication channels of the mobile service or of the mobile-satellite service. (RR)

Radiotelex Call. A telex call, originating in or intended for a mobile station or a mobile earth station, transmitted on all or part of its route over the radiocommunication channels of the mobile service or the mobile-satellite service. (RR)

Radio Waves or Hertzian Waves. Electromagnetic waves of frequencies arbitrarily lower than 3,000 GHz, propagated in space without aritificial guide. (RR)

Reduced Carrier Single-Sideband Emission. A single-sideband emission in which the degree of carrier suppession enables the carrier to be reconstrituted and to be used for demodulation. (RR)

Reference Frequency. A frequency having a fixed and specified position with respect to the assigned frequency. The displacement of this frequency with respect to the assigned frequency has the same absolute value and sign that the displacement of the characteristic frequency has with respect to the centre of the frequency band occupied by the emission. (RR)

Reflecting Satellite. A satellite intended to reflect radiocommunication signals. (RR)

Right-Hand (or Clockwise) Polarized Wave. An Elliptically or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a right-hand or clockwise direction. (RR)

Safety Service. Any radiocommunication service used permanently or temporarily for the safeguarding of human life and property. (CONV)

Satellite. A body which revolves around another body of preponderant mass and which has a motion primarily and permanently determined by the

force of attraction of that other body. (RR)

Satellite Link. A radio link between a transmitting earth station and a receiving earth station through one satellite. A satellite link comprises one up-link and one down-link. (RR)

Satellite Network. A satellite system or a part of a satellite system, consisting of only one satellite and the cooperating earth stations. (RR)

Satellite System. A space system using one or more artificial earth satellites. (RR)

Secondary Radar. A radiodetermination system based on the comparison of reference signals with radio signals retransmitted from the position to be determined. (RR)

Semi-Duplex Operation. A method which is simplex operation at one end of the circuit and duplex operation at the other.[3] (RR)

Ship Earth Station. A mobile earth station in the maritime mobile-satellite service located on board ship. (RR)

Ship Movement Service. A safety service in the maritime mobile service other than a port operations service, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the movement of ships. Messages which are of a public correspondence nature shall be excluded from this service. (RR)

Ship's Emergency Transmitter. A ship's transmitter to be used exclusively on a distress frequency for distress, urgency or safety purposes. (RR)

Ship Station. A mobile station in the maritime mobile service located on board a vessel which is not permanently moored, other than a survival craft station. (RR)

Simplex Operation. Operating method in which transmission is made possible alternatively in each direction of a telecommunication channel, for example, by means of manual control.[5] (RR)

Single-Sideband Emission. An amplitude modulated emission with one sideband only. (RR)

Software defined radio. A radio that includes a transmitter in which the operating parameters of frequency range, modulation type or maximum output power (either radiated or conducted) can be altered by making a change in software without making any changes to hardware components that affect the radio frequency emissions.

Spacecraft. A man-made vehicle which is intended to go beyond the major portion of the Earth's atmosphere. (RR)

Space Operation Service. A radiocommunication service concerned exclusively with the operation of spacecraft, in particular space tracking, space telemetry, and space telecommand.

NOTE: These functions will normally be provided within the service in which the space station is operating. (RR)

Space Radiocommunication. Any radiocommunication involving the use of one or more space stations or the use of one or more reflecting satellites or other objects in space. (RR)

Space Research Service. A radiocommunication service in which spacecraft or other objects in space are used for scientific or technological research purposes. (RR)

Space Station. A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere. (RR)

Space System. Any group of cooperating Earth stations and/or space stations employing space radiocommunication for specific purposes. (RR)

Space Telecommand. The use of radiocommunication for the transmission of signals to a space station to initiate, modify or terminate functions of equipment on a space object, incuding the space station. (RR)

Space Telemetry. The use of telemetry for transmission for a space station of results of measurements made in a spacecraft, including those relating to the functioning of the spacecraft. (RR)

Space Tracking. Determination of the orbit, velocity or instanteneous position of an object in space by means of radiodetermination, excluding primary radar, for the purpose of following the movement of the object. (RR)

Special Service. A radiocommunication service, not otherwise

[5] (See footnote under Duplex Operations.)

defined in this Section, carried on exclusively for specific needs of general utility, and not open to public correspondence. (RR)

Spread Spectrum Systems. A spread spectrum system is an information bearing communications system in which: (1) Information is conveyed by modulation of a carrier by some conventional means, (2) the bandwidth is deliberately widened by means of a spreading function over that which would be needed to transmit the information alone. (In some spread spectrum systems, a portion of the information being conveyed by the system may be contained in the spreading function.)

Spurious Emission. Emission on a frequency or frequencies which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products, but exclude out-of-band emissions. (RR)

Standard Frequency and Time Signal-Satellite Service. A radiocommunication service using space stations on earth satellites for the same purposes as those of the standard frequency and time signal service.

NOTE: This service may also include feeder links necessary for its operation. (RR)

Standard Frequency and Time Signal Service. A radiocommunication service for scientific, technical and other purposes, providing the transmission of specified frequencies, time signals, or both, of stated high precision, intended for general reception. (RR)

Standard Frequency and Time Signal Station. A station in the standard frequency and time signal service. (RR)

Station. One or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on a radiocommunication service, or the radio astronomy service.

NOTE: Each station shall be classified by the service in which it operates permanently or temporarily. (RR)

Suppressed Carrier Single-Sideband Emission. A single-sideband emission in which the carrier is virtually suppressed and not intended to be used for demodulation. (RR)

Survival Craft Station. A mobile station in the maritime mobile service or the aeronautical mobile service intended solely for survival purposes and located on any lifeboat, life-raft or other survival equipment. (RR)

Telecommand. The use of telecommunication for the transmission of signals to initiate, modify or terminate functions of equipment at a distance. (RR)

Telecommunication. Any transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems. (CONV)

Telegram. Written matter intended to be transmitted by telegraphy for delivery to the addressee. This term also includes radiotelegrams unless otherwise specified.

NOTE: In this definition the term *telegraphy* has the same general meaning as defined in the Convention. (CONV)

Telegraphy. A form of telecommunication which is concerned in any process providing transmission and reproduction at a distance of documentary matter, such as written or printed matter or fixed images, or the reproduction at a distance of any kind of information in such a form. For the purposes of the [international] Radio Regulations, unless otherwise specified therein, telegraphy shall mean a form of telecommunication for the transmission of written matter by the use of a signal code.[6] (RR)

Telemetry. The use of telecommunication for automatical indicating or recording measurements at a distance from the measuring instrument. (RR)

Telephony. A form of telecommunication set up for the transmission of speech or, in some cases, other sounds.[7] (RR)

Television. A form of telecommunication for the transmission of transient images of fixed or moving objects. (RR)

[6] (See footnote under Harmful Interference)
[7] (See footnote under Harmful Interference)

Terrestrial Radiocommunication. Any radiocommunication other than space radiocommunication or radio astronomy. (RR)

Terrestrial Station. A station effecting terrestrial radiocommunication.

NOTE: In these [international Radio] Regulations, unless otherwise stated, any station is a terrestrial station. (RR)

Time Hopping Systems. A time hopping system is a spread spectrum system in which the period and duty cycle of a pulsed RF carrier are varied in a pseudorandom manner under the control of a coded sequence. Time hopping is often used effectively with frequency hopping to form a hybrid time-division, multiple-access (TDMA) spread spectrum system.

Transponder. A transmitter-receiver facility the function of which is to transmit signals automatically when the proper interrogation is received. (FCC)

Tropospheric Scatter. The propagation of radio waves by scattering as a result of irregularities or discontinuities in the physical properties of the troposphere. (RR)

Unwanted Emissions. Consist of spurious emissions and out-of-band emissions. (RR)

[49 FR 2368, Jan. 19, 1984, as amended at 50 FR 25239, June 18, 1985; 51 FR 37399, Oct. 22, 1986; 52 FR 7417, Mar. 11, 1987; 54 FR 49980, Dec. 4, 1990; 55 FR 28761, July 13, 1990; 56 FR 42703, Aug. 29, 1991; 58 FR 68058, Dec. 23, 1993; 62 FR 26242, May 13, 1997; 65 FR 60109, Oct. 10, 2000; 66 FR 50840, Oct. 5, 2001]

Subpart B—Allocation, Assignment, and Use of Radio Frequencies

SOURCE: 49 FR 2373, Jan. 19, 1984, unless otherwise noted.

§ 2.100 International regulations in force.

The International Radiocommunication Union *Radio Regulations*, Edition of 2001, became effective internationally on January 1, 2002, except as provided in the references in Article 59.

[67 FR 59601, Sept. 23, 2002]

§ 2.101 Nomenclature of frequencies.

Band No.	Frequency subdivision	Frequency range
4	VLF (very low frequency).	Below 30 kHz.
5	LF (low frequency)	30 to 300 kHz.
6	MF (medium frequency)	300 to 3000 kHz.
7	HF (high frequency)	3 to 30 MHz.
8	VHF (very high frequency).	30 to 300 MHz.
9	UHF (ultra high frequency).	300 to 3000 MHz.
10	SHF (super high frequency).	3 to 30 GHz.
11	EHF (extremely high frequency).	30 to 300 GHz
12	.....	300 to 3000 GHz.

§ 2.102 Assignment of frequencies.

(a) Except as otherwise provided in this section, the assignment of frequencies and bands of frequencies to all stations and classes of stations and the licensing and authorizing of the use of all such frequencies between 9 kHz and 400 GHz, and the actual use of such frequencies for radiocommunication or for any other purpose, including the transfer of energy by radio, shall be in accordance with the Table of Frequency Allocations in § 2.106.

(b) On the condition that harmful interference will not be caused to services operating in accordance with the Table of Frequency Allocations the following exceptions to paragraph (a) of this section may be authorized:

(1) In individual cases the Commission may, without rule making proceedings, authorize on a temporary basis only, the use of frequencies not in accordance with the Table of Frequency Allocations for projects of short duration or emergencies where the Commission finds that important or exceptional circumstances require such utilization. Such authorizations are not intended to develop a service to be operated on frequencies other than those allocated such service.

(2) A station for the development of techniques or equipment to be employed by services set forth in column 5 of the Table of Frequency Allocations may be authorized the use of frequencies allocated to those services or classes of stations.

(3) Experimental stations pursuant to part 5, may be authorized the use of any frequency or frequency band not exclusively allocated to the passive